PATENT
Attorney Docket No. **98-2046**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: James R. Connor *et al.*
Serial No.: 09/500,713 Art Unit: 1646
Filed: 2/09/2000 Examiner: Chernyshev
Entitled: **Methods For The Detection Of Demylenating Diseases**

DECLARATION OF DR. JAMES R. CONNOR PURSUANT TO 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: September 29, 2003 By: Traci L. Light
Traci E. Light

Madam:

I, Dr. James R. Connor, under penalty of perjury, state that:

1. I am a joint inventor of the subject matter claimed in the United States patent application captioned above.

2. I am of one of skill in the art relevant to the patent application captioned above. I offer my *curriculum vitae*, attached at TAB 1, to show my experience and training in the field.

3. As noted in the application as filed,

> "[f]or the distribution analysis, tissue sections could be stored for up to 2 weeks with no noticeable loss in binding activity. *No differences in ferritin or transferrin binding distributions were observed in postmortem v. operative tissue.*" Application filed on February 09, 2000, page 22, lines 6-7. (emphasis added).

This observation demonstrates that, in terms of the claimed detection methods, no significant differences were seen in the distribution of iron binding proteins between (control) tissue obtained from different individuals (e.g. surgical patients vs. cadavers) free from the pathological manifestations of a demyelinating disease. Moreover, the fact that these control sample can be stored for up to two weeks, with no noticeable loss in binding activity, is evidence of the robustness of the detection methods as claimed.

4. In one embodiment of the present invention, the decrease in ferritin binding (observed in CNS lesions and periplaque margins of an experimental brain tissue sample) is an indicia consistent with a finding of a demyelinating disease. See, application, page 7, lines 9-11.

5. In one embodiment of the present invention, the binding of transferrin (in periplaque regions of an experimental brain tissue sample) is another indicia consistent with a finding of a demyelinating disease. See, application, page 8, lines 8-11.

6. As noted in the specification of the application as filed, different iron binding proteins bind differently to: i) brain tissue from a human suspected of having a demyelinating disease and ii) brain tissue from a human free of the pathological manifestations of a demyelinating disease. See, application, page 8, lines 4-25.

7. Given the discrete binding profiles of iron binding proteins to control and experimental tissue samples (as discussed in the paragraphs above), one of skill in the art would be able to evaluate the differences in the degree of binding of iron binding protein to, i) the first brain tissue sample (e.g. the experimental sample) and ii) the second brain tissue sample (e.g. the control) as part of a method for the detection of multiple sclerosis.

Dated: 9-25-03

Dr. James R. Connor

JAMES R. CONNOR, Ph.D.

George M. Leader Family Alzheimer's Disease Research Laboratory
Department of Neural and Behavioral Sciences
The Penn State University College of Medicine
The Milton S. Hershey Medical Center
P.O. Box 850, 500 University Drive
Hershey, PA 17033

PERSONAL INFORMATION:

Date and Place of Birth:	June 10, 1953; Covington, Kentucky
Marital Status:	Married; two adult children
Telephone:	(717) 531-6903
Fax:	(717) 531-5184
EMail:	JRC3@psu.edu

EDUCATIONAL HISTORY

1975	B.A.	Psychology, Thomas More College, Ft. Mitchell, Kentucky
1978	M.S.	Biological Sciences (Physiology), Wright State University, Dayton, Ohio
1981	Ph.D.	Anatomy, University of California, Berkeley, California

PROFESSIONAL POSITIONS:

2003-	Co-Director, Nutrition Sciences option Integrative Biosciences Graduate Program
2002- 2003	Interim Chair, Department of Neuroscience & Anatomy, The Pennsylvania State University College of Medicine, M.S. Hershey Medical Center, Hershey PA
1999-2002	Vice-Chair, Department of Neuroscience & Anatomy, The Pennsylvania State University College of Medicine, M.S. Hershey Medical Center, Hershey PA
1996-	Professor of Neuroscience & Anatomy, The Pennsylvania State University College of Medicine, M.S. Hershey Medical Center, Hershey PA
1993-	Director, George M. Leader Family Laboratory for Alzheimer's Disease Research, Department of Neuroscience and Anatomy, The Pennsylvania State University College of Medicine, Hershey, PA
1990-1996	Associate Professor of Neuroscience & Anatomy, M.S. Hershey Medical Center, The Pennsylvania State University College of Medicine (awarded tenure 1992)
1987-1990	Assistant Professor, Department of Anatomy, M.S. Hershey Medical Center, The Pennsylvania State University College of Medicine
1985-1986	Visiting Assistant Professor, Department of Anatomy, The George Washington University School of Medicine
1983-1987	Assistant Research Professor, Department of Physiology, The George Washington University School of Medicine
1983-1987	Research Biologist, Veterans Administration Medical Center, Washington DC
1981-1983	Post-Doctoral Fellow (National Institute on Aging Training Grant), Department of Anatomy, Boston Univers Medical Center. (Mentor: A. Peters)
1979-1981	Predoctoral Trainee, U.C. Berkeley (National Institutes of Health Training Grant, (Mentor: M.C. Diamond)

AFFILIATE APPOINTMENTS

Graduate Program in Molecular Medicine Penn State University (1998-)
Graduate Program in Molecular Toxicology, Penn State University (1998-)
Graduate Program in Nutrition, Pennsylvania State University, University Park (1990-)
Cellular and Molecular Biology Graduate Program, Penn State University College of Medicine (1989-
Penn State Center for Gerontology, Pennsylvania State University, University Park (1988-)
Clinical Psychologist (Research), Veterans Administration Medical Center, Lebanon, PA (1988-)
Neuroscience Graduate Program, Pennsylvania State University College of Medicine (1987-)

PROFESSIONAL DEVELOPMENT

Leadership Development Module 6: Masterful Coaching- A five-step method to maximize our potential (Penn State University, Dec. 10, 2002)

RESEARCH SUPPORT

Current:

1994-	PHS 1 P01 HD30704-06 (NIH/NICHD): *Perinatal Hypoxic-Ischemic Brain Damage* ,. Connor PI on Project #5: *Hypoxia and Glia*
1999-	1 PO1 DK53430 (NIH/NIDDK) *Molecular Dynamics of Iron Regulation and Function* Connor PI on Project #2 and co-PI on program project: *Iron Regulatory Proteins.*
2001-	1 R01 DK54289-01 PI: J. Connor National Institutes of Health National Institute of Diabetes & Digestive & Kidney Diseases Translocation and Function of Nuclear Ferritin
2001	1 PO1 HD39386-01 (Betsy Lozoff, Program Director) Brain and Behavior in Early Iron Deficiency (co-drector of Analytical Core) National Institutes of Child Health and Development
2001	*Is Hemochromatosis a Risk Factor for Alzheimer's Disease?* Alzheimer's Association (P.I. Connor)
2002-	*Center for the Study of BioMetals in Health and Disease* Tobacco Settlement Fund, Pennsylvania State University (P.I. Connor).
2003-	*Genotyping Analysis for Hfe Mutations in Amyotrophic Lateral Sclerosis*, Muscular Dystrophy Assocation (PI Connor)
2003-	*Is Defective Transferrin Receptor expression the cause of Restless Legs Syndrome* (PI Connor) Restless Legs Syndrome Foundation
2003-	*A Multifaceted Approach to Understanding Blood-Brain-Barrier Function* (PI Connor) Pennsylvania Department of Health Tobacco Settlement Funds
2003-	1 P01 NIH/NIA *Restless Legs Syndrome: the iron-dopamine connection* (Connor is PI on Project #4) scored at 3.3. percentile expecting start date of Dec. 1, 2003.

Past Research Support:

1987-1990	"Transferrin in the nervous system following alcohol consumption"; (Veterans Administration) Principal Investigator (not activated)
1988-1989	"Aluminum access to the brain: the role of the transferrin receptor"; (American Federation for Aging Research) Principal Investigator
1988-1990	"Transferrin and its receptor in the brain in aging and Alzheimer's Disease"; (American Health Assistance Foundation) Principal Investigator
1988-1990	"Expression of the transferrin receptor by transformed glial cell lines"; (American Cancer Society - Institutional Research Grant) Co-Principal Investigator (with Dr. William Bartlett)
1992-1993	"Iron Accumulation and Oxidative Damage in the Aging Brain"; Faculty Development Project; Pennsylvania State University Gerontology Center. Principal Investigator.
1989-1992	"The iron system in oligodendrocytic function". (National Multiple Sclerosis Society) Principal Investigator

Past Research Support: (continued)

1990-1994	1 R01 AG09063-04 (NIH/NIA): Ferritin and transferrin in CNS aging and disease, Principal Investigator
1994-1997	IIRG-94-122 (Alzheimer's Disease and Related Disorders Assoc. Inc.): *Regulation of APP Expression by an Iron-responsive-like Element* Principal Investigator
1997-1998	Bureau of Mines 1155242: *Iron Disposition in the Alveolar Macrophage: Relation to Dust-Induced Oxidative Stress*, Principal Investigator
1999-2001	ASTRA/ZENECA *Role of Iron in Activation of Microglial Cells* (PI; Connor)
2000-2001	Four Diamonds Research Foundation Penn State University Children's Hospital (PI Connor)
1985-2000	2 R01 NS22671-13 (NIH/NINDS): *Dynamics of iron metabolism in Neuroglia*, Principal Investigator
1997-2001	1R01 NS34280-04 (NIH/NINDS) *Brain Iron localization, function and regulation.* Principal Investigator (revision pending)
2001-2002	*Elucidating Mechanisms for Regulation of Iron Acquisition by the Brain.* Restless Legs Syndrome Foundation (P.I. Connor)

EDITORIAL/REVIEWING RESPONSIBILITIES

Editorial Boards:
Journal of Neuroscience Research (1994 -), *GLIA (2001-), Journal of Alzheimer's Disease (Assoc. Editor 2001-2002), Current Neurovascular Research (first issue March 2004)*

Ad hoc reviewer for the following scientific journals (last 3 years):

American Journal of Pathology
American Journal of Physiology (2001,2002)
Annals of Neurology (2000,2002)
Archives of Biochemistry and Biophysics (2000)
Biological Psychiatry
Biochemical Pharmacology
Biochimica et Biophysica Acta (2003)
Biological Pharmacology
Brain Research (2003)
Brain Research Bulletin (2001,2002, 2003)
Comparative Biochemistry and Physiology
Developmental Brain Research (2001)
Developmental Neuroscience (2002)
Experimental Aging Research (2002)
Experimental Brain Research (2002)
Experimental Neurology (2000,2002)
FASEB
Free Radicals in Biology and Medicine (2003)
Genome
Human Molecular Genetics (2000)
Intl J. of Biochemistry and Cell Biology (2001)
In vitro and Developmental Biology (2000,2001)
Journal of Biological Chemistry (2001)
Journal of Cerebral Blood Flow & Metabolism
Journal of Comparative Neurology (1998)
J. Histochemistry and Cytochemistry (2000)
Journal of Neurochemistry (2001,2002,2003)
Journal of Neuropathology and Experimental Neurology
Journal of Neuroscience (2001,2002,2003)
Journal of Nutrition (2000,2002)
Journal of Lipid Research
Microcirculation (2002)
Nature Cell Biology (2001)
Neurobiology of Aging(2003)
Neuroscience
Neuroscience Letters (2001)
Neurotoxicology (1999)
Oncology Research (1999)
Pediatric Research (1999)
Physiology and Behavior
Proc. of National Academy of Science (2000,2001)
Pharmacology and Toxicology(2002)
Royal Society Biology Letters (2003)

Service for Granting Agencies

Alzheimer's Association (Ad Hoc; 1991, 1992,1993,1998,)
Initial Review Board of the Medical and Scientific Advisory Council (1999-)
American Federation for Aging Research (Ad Hoc; 1992, 1993, 1995)
National Scientific Advisory Council (1996-)
American Heart Association (Scientific Review Board member/stroke division 2000- (Co-chair 2001)
Austrian Science Fund (2000)
Health Environmental Institute, Cambridge MA (2003)
Hong Kong Research Grants council (Ad hoc; 1998,1999, 2000)
Israel Academy of Science (Ad hoc; 1995)
Medical Research Council of Canada (Ad hoc; 1995, 1996, 1997, 1998)
National Institutes of Health:
Neurobiology B-II Study Section (March, 1990)
NICHD Site Visit of Mental Retardation Research Center, UCLA (1991)
Neurobiology B-1 Study Section (Ad Hoc; February 1992)
NIAAA, Special Review Commitee for Alcohol Research Center Grant (1993)
Metallobiochemistry Study Section (ad hoc: September 1993)
NIEHS, Mechanisms of Environmental Oxidative Stress and Dietary Modulation. (Special Emphasis Panel, July 2001)
Center for Scientific Review Special Emphasis Panel (ZRG1 BDCN-2) December, 2001
NINDS, Neurological Sciences and Disorders B , February 2002, Feb., 2003
Historically Black Colleges and Universities Research Scientist Award (Howard University Medical School) Site visit May 30, 2003
Neurological Sciences and Disorders A (ad hoc, June 2003)
National Science Foundation, (all Ad Hoc)
Developmental Neuroscience Panel (1983)
Integrative Neural Systems Group (1985)
Instrumentation and Instrument Development Program (1990)
NSF-EPSCoR in South Dakota (1994)
National Science and Engineering Research Council of Canada (ad hoc: 1994, 2000)
Paralyzed Veterans of America (Ad hoc: 1995)
Spinal Cord Research Foundation (Ad Hoc; 1986)
United States-Israel Binational Science Foundation (ad hoc; 1996)
United States Department of Agriculture (ad hoc; 1997, 1998, 2000, 2002)
Wellcome Trust (London) (Special Reviewer; 1995, 1998)
Veterans Administration:
Merit Review Board for Neurobiology (Special Reviewer; 1991, 1992,1995, 1996, 2002 member; 1993)
Vikings Children fund, University of Minnesota (2002)

HONORS AND AWARDS

1990 Samuel Hinkle Society Outstanding Young Investigator Award, Pennsylvania State University/M.S. Hershey Medical Center
2000 Elected Chair of the East Coast Iron Club (2000-2002)
2002 Nominated for Teacher Appreciation Award Class of 2005

PATENTS

U.S. Patent Application No. 09/226,794 (W. Debinski and J. Connor):
Method for Diagnosis Imaging and Treating Tumors Using Restrictive Receptor of Interleukin 13.
U.S. Patent Application No. 09/500,713 (J. Connor and S. Hulet)
Distribution of Transferrin and Ferritin Binding in Normal and Multiple Sclerotic Human Brain
Provisional Application No. 60/203,035 (J.Connor and Z. Ye)
Cloning full length cDNA by Amplification of first strand cDNA with Specific Primers

LICENSING AGREEMENTS

ARENA Pharmaceuticals (2001-2004)
Rat Microglial Cell Line (J. Connor and P. Cheepsunthorn)
Pfizer Inc. (2001-2006)
Rat Microglial Cell Line (J. Connor and P. Cheepsunthorn)
Autgen (2002-2007)
Rat Microglial Cell Line (J. Connor and P. Cheepsunthorn)

CONSULTING/SCIENTIFIC ADVISORY SERVICES

Synapse Technologies, Inc. Vancouver Canada
Iron Disorders Institute Scientific Advisory Board Member (1998-)
Astra Arcus USA, INC (1998- 2000)
International Scientific Advisory Board for the International Conference on Metals and Brain (1999-)
Restless Legs Syndrome Foundation, (Scientific Advisory Board Member 2000-)
Pasteur Institute, Paris France Department of Biochemistry and Molecular Genetics, Laboratory of Eucaryotic Gene Regulation (Chair of External Scientific Review Committee, 2000)
GlaxoSmithKline Restless Legs Syndrome National Advisory Board (2002-)
International Copper Society (2003)

TEACHING EXPERIENCE

Pennsylvania	**State University**
1987-1991	Gross Anatomy Lecturer and Laboratory Instructor
1987- 96	Medical and Graduate Neuroscience, Lecturer
1987-	Elements in Neuroscience Graduate Course, Lecturer, (co-course director 1995-96)
1990-93	Cellular and Molecular Biology Graduate Course, Lecturer
1989-93	Director; Neuroscience & Anatomy Special Topics Course
1991-	Histology/Embryology; Course Director
1999	Lecturer to Neurology Residents
2001-	Lecture on Neurodegenerative Diseases (Clinical Research Course)

PROFESSIONAL SOCIETIES (and Committee Appointments)

American Association of Anatomists (1981-)
Advisory Committee of Young Anatomists (Member; 1983-86)
Outstanding Dissertation Award Committee (Chairman; 1986)
Public Information Committee (Member; 1986-89)
American Society for Biochemistry and Molecular Biology (1997-
American Society for Cell Biology (1992-97)
American Society for Neurochemistry (1989-)
Committee on Membership (Member; 1991-93)
Committee on Travel Awards for Young Investigators (1993-95)
Strategic Planning Committee (1995)
Young Investigators Education Enhancement committee (1999- 2001)
Cajal Club (1981-)
New York Academy of Science (1990)
Sigma Xi, The National Research Society (1978-1988)
Society for Neuroscience (1978-)
Society for Neuroscience Susquehanna Valley Chapter
President; 1989-94
The Gerontological Society of America (1988-1989)
East Coast Iron Club (1992-)
Chair (2000- 2002)

DEPARTMENTAL/INSTITUTIONAL COMMITTEES

Pennsylvania State University (University Park)
Graduate Faculty Council; Medical Center Elected Representative, (1990-92)
Member Subcommittee on Graduate Student & Faculty Affairs (1990-91)
Member Subcommittee on Fellowships and Awards (1991-92)
Faculty Senate; Medical Center Elected Representative (1993-95)
Member Subcommittee on Research (1993-95)
Life Science Consortium: Neuroscience Graduate Program Steering Committee (1995-)
Graduate Program in Nutrition: Student Competitive Research Proposals (Evaluator 1998)
Nutritional Neuroscientist Search Committee (2002-)

Pennsylvania State University College of Medicine (Departmental):
Department of Neuroscience & Anatomy Seminar Series (1989- 93, 1997-2001)
Director of Graduate Studies, Department of Neuroscience & Anatomy (1990- 93)
Neuroscience & Anatomy Graduate Program Curriculum Committee (1993-2000)
Departmental Promotion and Tenure Committee (1992-2000, [Chairman 1993,1997-2000])

College of Medicine (Hershey)
Neuroscience Discussion Group (Chairman; 1987-1991)
Radiation Safety Committee (Member; 1988-93)
Medical Student Selection Committee (Interviewer; 1988-1992)
Medical Student Advisor (1989-1993)
Cellular and Molecular Biology Program Advisory Committee (1989-95)
Graduate Student Research Forum (Judge and Faculty Advisor; (1990-92)
M.D./Ph.D. Steering Committee (1990-)
Institutional Research Initiation Grant Committee (1990)
Search Committee for Chairperson of the Department of Biological Chemistry (1991-92)
Committee to Support Education in the Public Schools (1993- 95)
Confocal Microscope Oversight Committee (1993-)
Neuroscience Graduate Program Advisory Committee (1993-98)
sub-committee on Recruitment (1993-1995)
sub-committee on curriculum (1993- 97, chairman 1995-97)
LCME Task Force on Graduate Basic Science Education and Research (1994-95)
Interdisciplinary Course Committee for Cellular and Molecular Basis of Medicine (1996-)
Committee on Undergraduate Medical Education
subcommittee on Faculty Development (1997-98)
Steering and Implementation Committee for Joint Graduate Program Initiative (1997-2000)
Department of Anesthesiology Promotion and Tenure Committee (1997)
Internal Review committee for Department of Neuroscience & Anatomy (Chair, 1998-99)
Cancer Center Research Grant Review committee (1999)
Strategic Planning for Research Initiatives Committee (1999-2000)
Chairman, subcommittee on Neuroscience (1999-2000)
Dean's Feasibility Grants Scientific Review Committee (2000-2001)
Pennsylvania State University College of Medicine Promotion and Tenure Committee (2001-2002)
Nomination Committee for Faculty Organization Officers and Senators (2001)
Hinkle Society Steering Committee 2001- (Co-chair 2001-2003)
Planning Committee for Neuroscience Retreat (2001)
Penn State Neuroscience Advisory Committee (2002-
College of Medicine Internal Grants Review Committee (2002-
College of Medicine Tobacco Settlement Funds Grant Review Committee (2002-
Search Committee for the Chair of Department of Neurosurgery (2002)
Search Committee for the Chair of the Department of Pathology (2002-2003)
Research Mission Team Leader (2002-)
Teams Council (2002-

RESEARCH ADVISING:

Postgraduate Fellows/Visiting Scientists

Warry van Gelder, M.D, Ph.D.. 1993 (Clinical Chemist, The Netherlands)
Atsushi Takeda, Ph.D. 1995- 96 (Asst. Professor; University of Shizouka, Japan)
Yipeng Tang, M.D. 1996-97 (Professor; Beijing Univ., College of Traditional Chinese Medicine)
Jing Hu, Ph.D. 1996-99 (Database administrator; ADPIMS, Bethesda MD)
Elise Malecki, Ph.D. 1996- 2002 (NRSA receipient 1997-2000) Medical Student at U. Maryland
Zheng Ye, M.D. 1996-2000 (Macromolecular Structure Group, Biotechnology Research Institute of Canada Research Council)
Domingo Pinero, Ph.D. 1998-2002 (Asst Professor, New York University, Department of Nutrition)
Simone Heyliger, Ph.D. 1998-99 (Asst. Professor, Hampton Institute, VA)
Stephanie Patton, Ph.D. 2000-
Khristy Thompson, Ph.D. 2000-2002 (Research Assoc. Harvard School of Public Health)
Sang Lee, Ph.D. 2001-
S.P. Gill, Ph.D. 2001-
Xueshang Zheng, M.D. 2002-
Nodar Surguladze, Ph.D. 2002-
Xinsheng Wang, M.D., Ph.D. 2002-

Graduate Students

Helen Lin (**M.S. 1989; Anatomy;** M.D. from UMDNJ 1993, private practice physician)
Jane Roskams (**Ph.D. 1991; Neuroscience**; currently Asst. Professor, Univ. British Columbia.)
Stanley Benkovic (**M.S. Anatomy, 1992**, currently research fellow Univ. West Virginia)
Thomas Dickinson (**Ph.D. 1995, Neuroscience**; currently Associate Prof. Keuka College, NY)
Jing Hu (**Ph.D. 1995, Anatomy**; currently Database administrator; ADPIMS, Bethesda MD)
[1]Sara Robb (**Ph.D. 1998 Neuroscience**; Postdoctoral Fellow University of Dundee Scotland)
[2]Khristy Manges-Thompson (**Ph.D. 1999, Neuroscience;** Research Associate Harvard University)
Stanley Hulet (**Ph.D. 1999, Neuroscience,** National Research council fellow Dept. of Defense)
Poonlarp Cheepsunthorn (**Ph.D. 2001,** Neuroscience, Instructor at Chulalongkorn University, Faculty of Medicine, Bankok Thailand
Joseph Burdo (**Ph.D. 2003,** Neuroscience, Postdoctoral Fellow, Salk Institute with David Shubert)
Stacey Grab (M.D./Ph.D candidate, Cell and Molecular Biology)
Rebecca Henderson (Ph.D. candidate in Pharmacology; co-chair)
William Zinnanti (M.D./Ph.D candidate in Neuroscience)

Medical

Megan Gerber (NIH Fellow; Medical Student Research, 1988; M.D. 1990)
Suzanne St. Martin (NIH Fellow; Medical Student Research, 1989, M.D. 1992)
Peter Tucker (Medical Student Research, 1990, M.D. 1993)
James White (Medical Student Research, 1991; M.D. 1994)
Mark Larnick (Medical Student Research, 1991; M.D. 1994)
Gino Pavlick (Medical Student Research, 1991; M.D. 1994)
Stephen Focht (Medical Student Research, 1992; M.D. 1995)
Jeremy Burd (Medical Student Research, 1994; M.D. 1996)
Kerry Bruce (Medical Student Research,1995, MD. 1997)
Gregory Blissman (Medical Student Research,1995)
Wyman Morris (Medical Student Research, 1996, M.D. 1998)
David Epstein (1997- 99, M.D. 1999)

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[1] Received Marian Kies Award from the American Society for Neurochemistry for outstanding research conducted during graduate training.

[2] Received second place award for Graduate student research from Society For Toxicology (metals section)

RESEARCH ADVISING (continued)

Undergraduate

Kimberly C. Moore (Penn State University EOPC Fellowship, 1989)
Robert D. Biter (Whitaker Foundation Scholar, 1990)
David Karli (Whitaker Foundation Scholar, 1991)
Kristen Boeshore (Senior Honors Project; Lebanon Valley College, 1992)
Inneke Jackson (Penn State University EOPC Fellowship, 1994)
Jessica Walter (Howard Hughes Summer High School Student, 1994)
Jeffrey Kroh (Bucknell University, Co-operative program, 1994)
Theodore Ebersole (York College Intern Program, 1995)
Heidi Edinger (Howard Hughes Summer High School Student, 1995)
Kristin Wright (Internship from Lock Haven University, 1997,1998)
Josh Hottenstein (Internship from Messiah College, 1998)
Jason Martin (Internship from Messiah College, 1998)
Mandy Maneval (Whitaker Foundation Scholar 1998)
Jeanette K. Dean (LSC Fellowship, 1999)
Adrienne Jones (LSC Fellowship, 2000)
Randy Schrencengost (Internship with Messiah College, 2000)
Molly Crennan (Senior Honor's Research Project, Elizabethtown College, 2001)
Nadine Powell (Senior Honor's Project, Dickinson College, 2003)
Katie Scipieanski (LSC Fellow, 2003)
Bozho Todorich (LSC Fellow, 2003)
Lynn Maurer (internship with Lock Have University, 2003)

Thesis Committee Member:

Myles J. Jaffee (Ph.D. 1986; Physiology; George Washington University)
Joseph Polli (Ph.D. 1990; Pharmacology, Penn State University)
Kehinde Morohunfola (Ph.D. 1991; Anatomy,Penn State University)
Xiao-Su Li (Ph.D. 1992 Anatomy, Penn State University)
Kathleen Harris (M.D./Ph.D. 1992; Pharmacology, Penn State University)
Sarah Dunsmore (Ph.D. 1994; Cellular and Molecular Physiology, Penn State University)
Maribeth Tillman (Ph.D. 1994; Microbiology and Immunology, Penn State University)
Shengwen Li (Ph.D. 1994; Biochemistry; Mt. Sinai School of Medicine, New York)
Qing Chen (M.S. 1994; Nutrition, University Park, Penn State University)
Warry van Gelder (Ph.D. 1995; Biochemistry, Erasmus University, The Netherlands)
Liang Xia (Ph.D.1995; Microbiology and Immunology, Penn State University)
Andrew Crowe (Ph.D. Physiology, The University of Western Australia, 1996)
William C. Gamberino (M.D./Ph.D. Neuroscience, 1996, Penn State University)
Stacy Hutchins (M.S. Anatomy, 1997, Penn State University)
Ansley Kealhler (M.S. Microbiology and Immunology, 1998 Penn State University)
Lynn Mains (Ph.D. 1998; Pharmacology, Penn State University)
Domingo Pinero (Ph.D. 1998; Nutrition, University Park, Penn State University)
Heather Ross (Ph.D. 1999; Cell and Molecular Biology, Penn State University)
Kieth Erickson (Ph.D. 2000, Nutrition, University Park, Penn State University)
Kevin Nash (M.S. 2000, Anatomy, Penn State College of Medicine)
Jian Han (Ph.D 2001, Nutrition, University Park, Penn State University)
Carolyn Pizoli (M.D./ P.D. 2001 (Ph.D) Cell and Molecular Biology, Penn State University)
Paul Meyer (MD/Ph.D, 2002 Molecular Medicine, Penn State College of Medicine)
Akiva Mintz (MD/Ph.D.2002 Microbiology/ Immunology, Penn State University)
Brain Reese (Ph.D candidate Neuroscience, Penn State University)
Malia Edwards (Ph.D., 2003 Monash University, Victoria Australia)
Christopher Grant (Ph.D. candidate Microbiology and Immunology)
Mark Meadowcroft (Ph.D. candidate Neuroscience)

PUBLICATIONS

Manuscripts

1. Davis, H.N. and **J.R. Connor.** Male modulation of female reproductive physiology in (Norway rats: Effects of mating during postpartum estrus. Behavorial and Neural Biology 29:128-131, 1980.

2 **Connor, J.R.** and H.N. Davis. Postpartum estrus in Norway rats. I. *Behavior Biology of Reproduction* 23: 994-999, 1980.

3. **Connor, J.R.** and H.N. Davis. Postpartum estrus in Norway rats. II. Physiology. *Biology of Reproduction* 23: 1000-1006, 1980.

4. Diamond, M.C., **J.R. Connor**, E.K. Orenberg, M. Bissell, M. Yost, A. Krueger. Environmental influences on serotonin and cyclic nucleotides in rat cerebral cortex. *Science* 210: 652-654, 1980.

5. **Connor, J.R.**, M.C. Diamond, and R.E. Johnson. Occipital cortical morphology: Alterations with age, environment, and social interaction. *Experimental Neurology* 68:158-170, 1980.

6. **Connor, J.R.**, M.C. Diamond, and R.E. Johnson. Effects of age and environment on two types of dendritic spines. *Experimental Neurology* 70: 371-379, 1980.

7. **Connor, J.R.**, M.C. Diamond, J.A. Connor, and R.E. Johnson. A Golgi study of the dendritic morphology of socially reared aged rats. *Experimental Neurology* 73: 525-533, 1981.

8. **Connor, J.R.**, J. Melone, A. Yuen, and M.C. Diamond. Terminal segment length of dendrites in aged rats: An environmentally induced response. *Experimental Neurology* 73:827-830, 1981.

9. **Connor, J.R.**, S.E. Beban, B. Hansen, P.E. Hopper, and M.C. Diamond. A Golgi study of the superficial pyramidal cells in the somatosensory cortex of socially reared aged rats. *Experimental Neurology* 76: 35-45, 1982.

10. **Connor, J.R.** A dichotomous response by two populations of layer V pyramidal neurons in the old adult rat visual cortex to different ial housing conditions. *Brain Research* 243: 153-154, 1982.

11. **Connor, J.R.**, S.E. Beban, J.H. Melone, A. Yuen, and M.C. Diamond. A quantitative Golgi study in the occipital cortex of the pyramidal dendritic topology of old adult rats from social or isolated environments. *Brain Research* 251: 39-44, 1982.

12. **Connor, J.R.** and M.C. Diamond. A comparison of dendritic spine number and type on pyramidal neurons of the visual cortex of old adult rats from social or isolated environments. *Journal of Comparative Neurology* 210: 99-106, 1982.

13. **Connor, J.R.**, E.C. Wang, and M.C. Diamond. Increased length of terminal dendritic segments in old adult rats somatosensory cortex: An environmentally induced response. *Experimental Neurology* 78:466-470, 1982.

14. **Connor, J.R.** and A. Peters. Vasoactive intestinal polypeptide immunoreactive neurons in the rat visual cortex. *Neuroscience* 12:1027-1044, 1984.

15. **Connor, J.R.** and E.M. Berkowitz. An immunohistochemical study of astrocytes isolated from the rat cerebral cortex. *Neuroscience* 16 :33-44, 1985.

16. **Connor, J.R.** and J.J. Bernstein. Vasoactive intestinal polypeptid neurons in fetal cortical homografts to adult rat spinal cord. *Brain Research* 367: 214-221, 1986.

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SYMPOSIA/CONFERENCES

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Panel: "Cellular Functions of Glia: Insights from X-linked Mutations". Twenty-fifth Winter Conference on Brain Research, Steamboat Springs, Colorado, January, 1992.

Panel: "The Choroid Plexus: A Multifunctional Organ for the Brain". Twenty-fourth meeting of the American Society for Neurochemistry, Richmond, Virginia, March, 1993.

Panel: "Choroid plexus and cerebrospinal fluid: Maintaining Chemical Homeostasis in the brain". Twenty-seventh Annual Winter Conference on Brain Research, Snowbird Utah January 1994

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Plenary Session: "Iron in the Brain" International Symposium Iron in Biology and Medicine, Saint Malo, France. June 1997

Session: Iron tranport and moblization" East Coast Iron Club, National Institutes of Health, November 1998.

Workshop: "What Neurologists should know about Iron in the Brain" Thirty-second Winter Conference on Brain Research, Snowmass CO, January 1999

Workshop: "Nutrition, Genetics and Medicine" Pennsylvania State University College of Medicine, Hershey PA, August 1999

Session: Iron tranporters East Coast Iron Club, Rockefeller University, November 1999.

Panel: Metabolism and Intracellular Trafficking in Oligodendrocytes. American Society for Neurochemistry, March 2000

Session: Neurodegenerative Disorders. First International Conference on Metals and Brain. Padova Italy, Sept. 2000.

Session: Is Hemochromatosis A Risk Factor for Alzheimer's Disease? First International Conference on Metals and Brain. Padova Italy, Sept. 2000.

East Coast Iron Club Annual Meeting. Meeting Chair/Organizer, University of Pennsylvania , November 2000

Session Chair: "Nitric Oxide: Good or Bad" US-Taiwan Neuroscience Symposium on Nitric Oxide, New Orleans LA 2000

Meeting Chair/Organizer: East Coast Iron Club Annual Meeting. Harvard University, Boston MA November, 2001

Colloquium: "Iron and Copper in Neurodegenerative Diseases", American Society for Neurochemistry, 33rd Annual Meeting, West Palm Beach FL, June 2002

East Coast Iron Club Annual Meeting. Meeting Chair/Organizer, National Institutes of Health, Bethesda MD , November 2002

Session: Metals and Neurodegenerative Disorders: Second International Conference on Metals and Brain, Fes Morocco, 2002

SYMPOSIA/CONFERENCES

Invited Participant:

"Transferrin Immunoreactivity in Schwann Cells of Mammals". Poster presentation, First International Regeneration Research Symposium, Pacific Grove, California, 1985.

"Altered Transferrin Levels in the CNS of Myelin Mutants". Poster presentation, Second International Regeneration Research Symposium, Pacific Grove, California, 1987.

"Iron Storage and Transport Proteins in the Brain in Alzheimer's Disease", (Invited Speaker) American Health Assistance Foundation, 15th Anniversary; Symposium on Aging, February 16-18, 1989, Tucson, Arizona.

"Does Aluminum Use the Transferrin-Transferrin Receptor System to Gain Access to the Brain". Poster presentation, American Federation for Aging Research Grantee Conference, June 2-4, 1989, Briarcliff Manor, New York.

"Altered Levels of Transferrin and Its Receptor in the Brain of Mycin Deficient Rats". Poster presentation, New York Academy of Sciences; Myelination and Dysmyelination, Washington, DC, November, 1989.

"Iron Regulatory Proteins in the Brain". Invited speaker, Winter Conference on Brain Research, Symposium, Brain Iron in Health and Disease (D. Perl, Chairman), Snowmass, Colorado, 1990.

"The Possible Role of Iron Regulatory Proteins in Myelination". Invited speaker, American Society for Neurochemistry, Symposium, The Role of Transferrin in Neural Cell Differentiation (J. deVellis, Chairman), Phoenix, Arizona, March 1990.

"Abnormal Mineral Metabolism During Alzheimer's Disease", Symposium: Critical Issues in Nutrition and Aging. Invited Speaker, Pennsylvania State University Nutrition Department, University Park, Pennsylvania, August, 1991.

"Anatomy and Molecular Biology of Iron, Transferrin and Ferritin". Symposium: Role of Iron & Oxidant Stress in the Normal and Parkinsonian Brain. (Invited Speaker) Sarasota, Florida, 1991.

"Iron Regulation in X-linked Myelin Mutants". Panel: Cellular Functions of Glia: Insights from X-linked Mutations. (Invited speaker) Winter Conference on Brain Research; Steamboat Springs, Colorado, January, 1992.

"Aluminum Access to the Brain Via the System for Iron Delivery". Panel: Is Aluminum Elevated in the Brain in Alzheimer's Disease? (Invited speaker) Second International Conference on Aluminum and Health; Tampa, Florida, February, 1992.

"Iron and Iron Regulatory Proteins in the Developing Rat Brain". Panel: Iron and the Integrity of the Developing Brain. (Invited speaker) American Society for Neurochemistry, Houston, Texas,1992.

"Mechanisms for Maintaining Iron Homeostasis in the Brain". (Invited speaker) Workshop on Iron in CNS Disorders. Wurzberg, Germany, 1993.

"Choroid Plexus and Brain Iron Homeostasis". Panel: The Choroid Plexus: A Multifunctional Organ for the Brain. (Invited speaker) American Society for Neurochemsitry, Richmond, Virginia, 1993.

"Iron Regulation in the Brain at the Cell and Molecular Level". (invited speaker) Keynote Address: Physiological Aspects of Iron Metabolism. 11th International Conference on Iron and Iron Proteins, Jerusalem, Israel, 1993.

"Alterations in plasma iron, total iron binding capacity and antioxidant activity following hypoxia in 7-day old rat pups." Gillis L, Palmer C.(presentor), Roberts R.L., Connor J.R. Mid-Atlantic Conference on Perinatal Research Hershey PA 1993

"The Control of iron in the brain: changes with disease states" (invited speaker) Pennsylvania Nutrition Interurban Club Fall Meeting. M.S. Hershey Medical Center 1993

SYMPOSIA/CONFERENCES (Invited Participant continuation)

"What the cerebrospinal fluid can tell us about brain iron homeostasis" Panel: Choroid Plexus and cerebrospinal fluid: Maintaining Chemical Homeostasis in the brain". (invited speaker) Twenty-seventh Annual Winter Conference on Brain Research, Snowbird Utah January 1994

"Dysfunction of the iron regulatory system in Alzheimer's Disease" Panel: Is there a role for oxidative damage in Alzheimer's Disease (invited speaker) E.D. Hall (chairman) Twenty-seventh Annual Winter Conference on Brain Research, Snowbird Utah January 1994

"Cellular Disposition of Iron, transferrrin and its receptor, and the isoferritins in normal, developing and Alzheimer's diseased brains" (invited speaker). XIIth International Congress of Neuropathology; Satellite Symposium on Normal and Pathological Brain Iron. Niagara Falls, NY September 1994

"In Vitro and In vivo detection of oxidativly modified proteins" Panel: "Endogenous Anti-oxidant mechanisms in the Brain" (invited speaker) J. Connor (chairman) Twenty-Eighth Winter Conference on Brain Research, Steamboat Springs, CO. January 1995

Nutrients and the Central Nervous System: Antioxidants, Minerals and Metabolism (co-chair and participating speaker) Experimental Biology, Atlanta GA, April 1995

"Cellular Expression of Iron and Ferritin mRNA in normal and hypoxic neonatal rat brain" (invited speaker) Session on Ferritin Gene Expression (C. Beaumont, chair) International Conference on BioIron, Asheville NC April, 1995

"The Relationship between Oligodendrocyte Development and Iron Acquisition" (invited speaker) Kroc Symposium on Frontiers in Myelination, University of Connecticut Health Center, Farmington CT, August 1995

"Altered ferritin and transferrin receptor distribution around brain lesions in Multiple Sclerosis" (invited speaker) International Symposium Iron in Biology and Medicine, St. Malo, France. June 1997.

"Animal Models for studying iron and Neurological Diseases" (invited speaker) Panel: "Nutrients and Neurological Disorders" (G. Rebec chair) Thirty-first Winter Conference on Brain Research, Snowbird Utah, January 1998

"Iron and the Brain" (invited speaker/program faculty) Program for the Family Teaching Conference of the Hemochromatosis Foundation, Inc. Hershey PA, October, 1998

"Hypotransferrinemic Mice: Iron Uptake and Redistribution in the Brain (invited speaker) Panel: Iron and Transferrin: Their Role in Development and Pathogenesis of the CNS (Pasquini and de los Monteros co-chairs). American Society for Neurochemistry, New Orleans LA, 1999

"Mitochondrial Response to Oxidative Stress in Astrocytes" (invited speaker) Panel: Stress-Response signaling in Glia Cells (N. Bhat chair) American Society for Neurochemistry, New Orleans LA, 1999

"Dyanmics of Ferritin Nuclear Localization" (oral presentation by student K. Thompson). Panel: Ferritins. World Congress on Iron Metabolism, Sorrento Italy. 1999

"HFE protein in the Brain" (invited speaker) Panel: HFE Protein. World Congress on Iron Metabolism, Sorrento Italy. 1999

"Iron transport mechanisms in the Brain" (invited speaker) Panel: Pathophysiology of Restless Legs Syndrome (R. Allen, Chair) American Professional Sleep Societies, 13th Annual Meeting, Orlando FL 1999

Iron transport in the brain and potential animal models for Restless Legs Syndrome (invited speaker) The Dopamine connection: NIH workshop, Bethesda MD 1999

Mechanisms of Iron Transport in the Brain (invited speaker). NIH sponsored workshop on Hallervorden-Spatz Syndrome. Bethesda MS, 2000

SYMPOSIA/CONFERENCES (Invited Participant continuation)

"Iron and Neurodegenerative Diseases" Plenary Lecture, First International Conference on Metals and Brain, Padova Italy. Sept. 2000

"Cell Models of Oxidative Stress" First International Conference on Metals and Brain, Padova Italy. Sept. 2000

"H-ferritin Null Mutant as a Potential Animal Model for the Disruptions in Iron Metabolism seen in Alzheimer's and Parkinson's Disease". (invited oral presentation) BioIron 2001-World Congress on Iron Metabolism, Cairns Australia

"Is Hemochromatosis a Risk Factor for Alzheimer's Disease" (invited oral presentation) BioIron 2001-World Congress on Iron Metabolism, Cairns Australia

Restless Legs Syndrome: A Disorder of Iron Metabolism?" (invited oral presentation) BioIron 2001-World Congress on Iron Metabolism, Cairns Australia

Gene Expression as Function of Iron Status in Human Astrocytoma Cells and Mouse Brain Macrophages" (invited oral presentation) BioIron 2001-World Congress on Iron Metabolism, Cairns Australia, August 2001

"The role of Iron in Alzheimer's Disease" Aspetti Pathogenetici della Malattia di Alzheimer (Keynote address) University of Milan, Italy, October 2001

"Is Hemochromatosis a Risk Factor for Alzheimer's Disease and other neurodegenerative disorders?" Iron Disorders Institute International Patient Conference (Keynote Speaker) Greenville SC, October 2001

"Iron, Oxidative Stress and Alzheimer's Disease" Research Conference on Alzheimer's Disease. Alzheimer's Association (Greater Harrisburg PA Chapter) November, 2001

"Regulation of Iron uptake and Storage in the Brain: Consequences of Malfunction" (Keynote Address) Second International Conference on Iron and Copper Homeostasis. Pucon Chile, November 2001

"Restless Legs Syndrome: A movement disorder of repose" Symposium on The Basis of Sleep/Wake motor control as Revealed Through Motor Disorders of Sleep. Society for Neuroscience 31st Annual meeting. San Diego CA, November 2001.

"The role of iron in Hypoxic/Ischemic Mediated Cell death. Pediatric Research Day, Children's Hospital, M.S. Hershey Medical Center, Hershey PA 2002

"Autopsy Results from Restless Legs Syndrome Suggest Loss of Iron Regulation" Symposium on "Pathophysiology of RLS: Iron and Dopamine Connection To RLS and Implications For Other Conditions" 16th Annual Meeting of the Associated Profession of Sleep Societies, Seattle WA. 2002

"The Role of Iron In Neurological Diseases" Thai Society for Neuroscience Annual Meeting 2002 (Keynote Address), Bangkok Thailand

"Restless Legs Syndrome: A Disorder of Iron Deficiency" Plenary Lecture Second International Conference on Metals and Brain, Fes Morocco, 2002 Session: :

"A New Animal Model to Study the Contribution of Iron to Neurodegenerative Disorders" Second International Conference on Metals and Brain, Fes Morocco, 2002

"Gene Expression Profiling as a function of Iron status in Astrocytes and Microglia" Second International Conference on Metals and Brain, Fes Morocco, 2002

"Iron Transport Proteins in the Diseased Brain" Symposium on Brain Iron in Hereditary and Sporadic Neurodegenerative Diseases. Society for Experimental Neuropathology, American Neurological Association, New York, New York, 2002.

SYMPOSIA/CONFERENCES (Invited Participant continuation)

"Discoveries from Restless Legs Syndrome Autopsy Studies " Symposium on "Restless Legs Syndrome: emerging discoveries on the diagnosis, treatment and prevention of this common sleep disorder" 17th Annual Meeting of the Associated Profession of Sleep Societies, Chicago IL 2003 (sponsored by GlaxoSmithKline).

"Mechanisms and Regulation of Iron transport at the BBB" Vth International Conference on Cerebral Vascular Biology 2003, Amarillo TX June 2003

(Abstracts presented at National/International Meetings add over 7 pages to the CV and are not included. They can be supplied if requested).

INVITED SEMINARS

1977

Postpartum estrus in Norway rats. Reproductive Endocrinology Program. University of Michigan.

1981

Environmental Influence on Aging Brain Morphology. Department of Anatomy, University of Kentucky Medical Center

1982

Environmental Influences on Aging Brain Morphology. Netherlands Institute for Brain Research, Amsterdam, The Netherlands

1983

Cellular Organization in the CNS: An Immunohistochemical Approach. Department of Anatomy, Boston University School of Medicine

Cellular Organization in the CNS: An Immunohistochemical Approach. National Institute on Aging, Bethesda, Maryland

Vasoactive Intestinal Polypeptide in the Rat Visual Cortex. Department of Neurobiology, Harvard Medical School

Immunohistochemistry in the CNS. Department of Physiology, George Washington University School of Medicine

1984

Immunohistochemiscal Observations on Astrocytes During Normative and Reparative States. Department of Anatomy, George Washington University School of Medicine

1986

Transferrin in the Rat Nervous System. Department of Physiology, George Washington University School of Medicine

Transferrin in the Nervous System. Department of Anatomy, Hahnemann University, Philadelphia, Pennsylvania

Transferrin in the Nervous System. Department of Anatomy and Cell Biology, Temple University School of Medicine, Philadelphia, Pennsylvania

Transferrin in the Nervous System. Department of Anatomy and Neurobiology, University of Kentucky Medical Center

Transferrin in the Nervous System. Department of Anatomy, Boston University School of Medicine

Transferrin in the Nervous System. Department of Anatomy, University of Utah School of Medicine

Transferrin in the Nervous System. Department of Anatomy, University of Indiana School of Medicine

Transferrin in the Nervous System. Department of Anatomy, University of Nebraska School of Medicine

1987

Transferrin in the Nervous System. Department of Pathology, George Washington University School of Medicine

Transferrin in the Nervous System. Perspectives in Cell Biology Seminar Series. Department of Cell Biology and Anatomy, University of Alabama, Birmingham Medical Center

Transferrin in the Nervous System. Neuroscience Seminar Program, Pennsylvania State University, Hershey Medical Center

Transferrin in the Nervous System. Department of Pharmacology, Pennsylvania State University, Hershey Medical Center

1989

Iron Regulatory Proteins in the Nervous System. Cellular and Molecular Biology Program, M.S. Hershey Medical Center

1990

Altered Brain Iron Proteins in Alzheimer's Disease and Demyelinating Disorders. 1990 Hinkle Society Lecture, The Milton S. Hershey Medical Center, Pennsylvania State University

Altered Brain Iron Proteins in Alzheimer's Disease and Demyelinating Disorders. GRECC Unit ENR Veterans Hospital, Bedford, Massachusetts

Iron-Binding Proteins in the Aging Brain. Pennsylvania State University Gerontology Center, University Park, Pennsylvania

INVITED SEMINARS (continued)

1991

Iron Regulation in the Brain in Normal and Diseased States. University of Indiana Medical Sciences Program, Bloomington, Indiana

Iron Regulatory Proteins in the Brain: Alteration in Alzheimer's Disease. Pennsylvania State University Colloquium, University Park , Pennsylvania

Proteins of Iron Regulation in the Brain in Aging and Disease. Department of Cellular and Molecular Physiology, M.S. Hershey Medical Center

Neurobiology of Aging and Alzheimer's Disease . Lebanon Valley College, Lebanon, Pennsylvania,

1992

Iron Regulation in Alzheimer's Disease. Grand Rounds, Department of Neurology, University of South Florida School of Medicine

1993

The Normal Aging Brain. Penn State University, Gerontology Center, University Park, PA

Mechanisms of iron regulation in CNS aging and disease ENR Veterans Hospital, Bedford MA

Iron regulatory mechanisms in the brain . Alkermes, Inc. Cambridge MA

Dynamics of iron homeostasis in normal and diseased brains. Hybritech Inc. La Jolla, CA

1994

Cellular Dynamics of Iron Homeostasis in the Brain . Department of Biochemistry and Molecular Biology, The University of South Dakota, School of Medicine

Mechanisms of iron regulation in the brain; dysregulation in disease. Cephalon, Inc. West Chester PA

Iron Dysregulation in Neurological Disorders: evidence and consequences : Endocrine Research Conference; M.S. Hershey Medical Center, Hershey PA

1996

Aging and Alzheimer's Disease Department of Chemistry, Gettysburg College, Gettysburg PA

1997

Iron Management in the Brain and Mismanagement in Disease. Department of Pharmacology, Pennsylvania State University College of Medicine, Hershey PA

Brain Iron Mismanagement in Alzheimer's Disease Department of Biochemistry, Boston University School of Medicine, Boston MA

Animal Models for Studying Brain Iron Metabolism Neuropathology Research Seminar, Johns Hopkins Universty School of Medicine

1998

Iron mismanagement in Alzheimer's Disease Surgical Research Conference, Penn State Geisinger Health Care System, Hershey PA

Emerging Issues in Brain Iron Management Department of Cancer Biology, Wake Forest University School of Medicine

Emerging Issues in Brain Iron Management , Department of Nutrition, Penn State University

1999

Iron and the Aging Brain Penn State University, Gerontology Center. University Park, PA

Cellular and Molecular Regulation of Iron in the Brain AstraZeneca Worcester MA

2000

Cellular mechanisms for iron acquisiton in the brain. National Institutes of Health, Laboratory of Diagnostic Radiology Research Clinical Center. Bethesda MD

Iron in Neurobiology: Human Diseases and Animal Models DIBIT, Instituto Scientifico San Raffaele, Milano Italy.

Iron in Neurobiology: Human Diseases and Animal Models Hospital Salpietre, Neurology Unit, Paris France

Iron and Demyelinating Diseases: therapeutic possibilites. Interferon Scientifics, New Brunswick, New Jersey

2001

Iron and the Brain: Human Diseases and Animal Models Harvard Human Nutrition Program, Harvard School of Public Health, Boston MA

Cellular and Molecular Mechanisms of Iron Homeostasis: Department of Biochemistry and Molecular Biology, Penn State University College of Medicine.

Does Restless Legs Syndrome Result from a Defect in Iron Transport? National Institute of Aging, Bethesda MD.

Is Hemochromatosis a Risk Factor in Neurological Disorders? International Meeting of Hemochromatosis Societies, sponsored by Hemochromatosis Society Australia Inc. Cairns Australia,

The Neurobiology of Iron: developing models for human diseases Universita degli studi di Milano, Instituto di Patologia Generale, October 2001

INVITED SEMINARS (continued)

2002

The Relationship between Iron and Restless Legs Syndrome. University of Pennsylvania Medical Center, Center for Sleep and Respiratory Neurobiology Philadelphia PA.

Iron in Neurobiology: Human Diseases and Animal Models. Integrative Biosciences Program in Neuroscience. Penn State University, University Park.

Iron and Myelination Chulalongkorn University, Faculty of Medicine, Bangkok Thailand

Mechanisms for Iron transport to the Brain Chulalongkorn University, Faculty of Medicine, Bangkok Thailand

The Role of Iron in Neurological Diseases Prince Songkla University, Faculty of Medicine, Hat Yai, Thailand.

2003

Iron in Neurobiology: Human Diseases and Animal Models. Neurology Grand Rounds. University of Washington, Seattle Washington.

Brain Iron and Neurological Disorders International Hemochromatosis Patient Conference, International BioIron Meeting 2003, Washington DC.

COMMUNITY SERVICE

1988

Pennsylvania State University, University Park, Pennsylvania, Guest Speaker: "Neuroscience Research at the M.S. Hershey Medical Center"

1989

Hershey Medical Center Explorers Club, Hershey, Pennsylvania, Guest Speaker, *"You and Your Brain"*

Country Meadows Nursing Home, Mechanicsburg, Pennsylvania, Guest Speaker, *"What Do We Know About Aging in the Brain?"*

Palmyra Lions Club, Palmyra, Pennsylvania, Guest Speaker, *"What Do We Know About Aging in the Brain?"*

West Shore Neighbor's Club, Camp Hill, Pennsylvania, Guest Speaker, *"What Do We Know About the Aging Brain?"*

West Shore Retired Men's Club, Camp Hill, Pennsylvania, Guest Speaker, *"What Do We Know About the Aging Brain?"*

1990

Hummelstown Rotary Club, Hummelstown, Pennsylvania, Guest Speaker, *"What Do We Know About the Aging Brain?"*

Trinity Lutheran church, Mt. Gretna, Pennsylvania, Guest Speaker, *"What Do We Know About the Aging Brain?"*

Warwick Township Lions Club, Lititz, Pennsylvania, Guest Speaker, *"What Do We Know About the Aging Brain?"*

National Association of Retired Federal Employees, Middletown, Pennsylvania, Guest Speaker, *"The Aging Brain"*,

Frey Village Retirement Community, Middletown , PA, Guest Speaker, *"The Aging Brain"*

Hershey Medical Center Volunteers, M.S. Hershey Medical Center, Pennsylvania State University, Hershey, Pennsylvania, Guest Speaker, *"The Aging Brain"*

Army Education Ctr., Ft. Indiantown Gap, Annville PA, Guest Speaker, *"The Aging Brain"*

1991

Leader Nursing Home, Lebanon, Pennsylvania, Guest Speaker, *"The Aging Brain"*

Lancaster Country Public Schools, LEAP Program, Guest Speaker, *"The Brain"*

Central Pennsylvania Business School, Guest Lecturer, *"The Brain"*

Steelton Rotary Club, Steelton, Pennsylvania, Guest Speaker, *"The Aging Brain"*

LPN Association, Lancaster Division, Lancaster, Pennsylvania, Guest Speaker, *"The Aging Brain"*,

Central Pennsylvania Business School, Harrisburg, Pennsylvania, (Physical Therapy Assistants), Guest Speaker, *"The Aging Brain"*

Derry Township Senior Citizens, Hershey, PA, Guest Speaker, *"Tips on Retaining Your Memory"*

Chem-Nuclear Systems Inc. Advisory Committee, Hershey, Pennsylvania, Guest Speaker, *"Use of Radioisotopes in Medical Research."*

1992

Carlisle Area School District, Carlisle, Pennsylvania, *"The Brain"*

Elizabethtown College Biology Club, Elizabethtown, Pennsylvania, Guest Speaker, *"Neurobiology of Aging and Alzheimer's Disease"*

Women's Civic Club of Hershey, Hershey, Pennsylvania, Guest Speaker, *"The Aging Brain"*

Manheim Central Senior High School, Advanced Biology Class, Manheim, PA, *"The Aging Brain"*

Spouses of the Pennsylania Municipal Authorities Association, *"The Aging Brain"*

Carlisle Area School District, Biology Class, Carlisle, Pennsylvania, *"The Brain"*

COMMUNITY/UNIVERSITY SERVICE (continued)[5]

1993
SEE Seminar Lancaster/Lebanon Intermediate Unit, *"The Brain"*
American Business Women's Association, Middletown, Pennsylvania, *"The Aging Brain"*

1994
Derry Township Schools; Fifth Grade Science Room: *"The Brain"*
American Association of Retired People (Hershey Chapter) *"The Aging Brain"*.
Hershey (PA) Rotary Club: *"A Role for Basic Science in the Health Care Reform Movement"*
Ladies Circle, St. John's United Christian Church, Lebanon PA: *"The Aging Brain"*
Pennsylvania Association for Medical Transcription, Grantville PA: *"How the Brain Works"*
Middletown (PA) Interfaith Apartments Lunch and Learn Group: *"The Aging Brain"*.
KTOK radio talk show (host Carol Arnold) Oklahoma City OK: guest expert on Alzheimer's Disease.
Bedford High School Advanced Biology Class (tour of HMC): *The Brain*
Chem Nuclear Systems, Inc. (tour of HMC): *Radioisotopes in Biomedical Research*

1995
Derry Township Schools; Fifth Grade Science Room: *"The Brain"*
American Institute of Chemical Engineers (local chapter): *"The Aging Brain"*

1996
Derry Township Schools; Fifth Grade Science Room: *"The Brain"*
Board of Trustees of the Homewood Retirement Centers: *"Aging and Alzheimer's Disease"*

1997
Derry Township Library (Brain Awareness Week): *"The Agin Brain"*
Derry Township Schools; Fifth Grade Science Room: *"The Brain"*
Elizabethtown Senior Citizens Center: *"Aging and Alzheimer's Disease"*
Retired Corporate Presidents and CEO's (Hotel Hershey) *"Aging and Alzheimer's Disease"*
WPSX interview on " *Dietary Iron Supplementation*"
Guest on "Heart of the Matter" syndicated Radio Talk show: *"Dietary Iron supplementation""*
Guest on "AMA radio talk show" syndicated radio show: *Iron in Health and Disease"*

1998
Mohler Senior Center, Hershey PA: *"The Aging brain, Memory and Alzheimer's Disease"*
Penn State Harrisburg Center: *"Brain Awareness: for the health of your mind"*
Country Meadows Nursing Home Alzheimer's Support group.
Areba Club (Senior Citizens Group): *"Aging and Alzheimer's Disease"*.
Alzheimer's Association South Central PA chapter's Research Conference (Hotel Hershey): *"State of the Art of Research in Alzheimer's Disease "*
WGAL TV show "Live at Noon" Guest expert on Alzheimer's Disease
Hershey Rotary Club *"Update on Alzheimer's Disease Research"*

1999
Hummelstown Rotary Club *"Update on Alzheimer's Disease Research"*
Mohler Senior Citizens Center, Hershey PA *"Update on Alzheimer's Disease Research"*
Participant in panel of experts for MedScape (syndicated radio show aired on National Public Radio) on iron disorders.

2000
Mohler Senior Citizens Center, Hershey PA *"Update on Alzheimer's Disease Research"*
Penn State College of Medicine "Mini-Medical School " *The Biological Basis of Alzheimer's Disease*

2001
Aging and Alzheimer's Disease Masonic Health Care Center, Elizabethtown PA
"Update on Alzheimer's Disease Research, Mohler Senior Citizens Center, Hershey PA
"The Brain and how it works". Philhaven Behavioral Health Center, Lebanon PA
"Alzheimer's Disease" St. Catherine's Nursing Center, Emmitsburg MD.

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[5] My laboratory provides presentations on the brain for numerous community and school groups that are touring the medical center.

COMMUNITY/UNIVERSITY SERVICE (continued)

2002

Alzheimer's Research Forum Live on-line chat: *Is Hemochromatosis a Risk Factor for Alzheimer's Disease?*

"The Brain and how it works". Philhaven Behavioral Health Center, Lebanon PA

"Restless Legs Syndrome: The iron connection" Baltimore Area RLS Patient support group. Johns Hopkins University, Baltimore MD